AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A support intended for observing between crossed polarisers an object placed on the support or in the vicinity thereof in a medium (3) of <u>refraction</u> index n_0 with spatially incident convergent <u>spatially</u> incoherent illumination under an angle θ_0 at a wavelength λ, including

- a substrate (1) of complex refraction index n_2, <u>and</u>

- a layer (2) of complex refraction index n_1 and of thickness e_1 <u>on said substrate, said substrate and said layer being in a medium of index n_0 and being configured for observation with spatially incident convergent non-coherent illumination under an angle θ_0 at a wavelength λ, said angle θ_0 being with respect to and axis normal to an observation surface of the support</u>

~~characterised in that~~ <u>wherein</u>, the value of the thickness e_1 of the layer (2) is within 2 % so that:

$$\frac{d^2}{de_1^2} \ln |\sigma|^2 = 0$$

with

$$\left[\left[\sigma = \frac{\sigma_{01} + \sigma_{12}(1+\pi_{01})e^{(-2j\beta_1)} + \sigma_{01}\pi_{12}e^{(-4j\beta_1)}}{(1+r_{01(p)}+r_{12(p)}e^{(-2j\beta_1)})(1+r_{01(s)}r_{12(s)}e^{(-2j\beta_1)})} \right]\right]$$

$$\sigma = \frac{\sigma_{01} + \sigma_{12}(1+\pi_{01})e^{(-2j\beta_1)} + \sigma_{01}\pi_{12}e^{(-4j\beta_1)}}{(1+r_{01(p)}r_{12(p)}e^{(-2j\beta_1)})(1+r_{01(s)}r_{12(s)}e^{(-2j\beta_1)})}$$

a formula wherein [[σ_{ij}]] $\underline{\sigma_{ik}}$ and [[π_{ij}]] $\underline{\pi_{ik}}$ represent respectively the sum and the product of the Fresnel coefficients of the different interfaces [(i,$\not{j}\underline{k}$)=(0,1) or (1,2)] [[:]]

$$\left[\left[r_{ij(p)} = \frac{n_j\cos\theta_i - n_i\cos\theta_j}{n_j\cos\theta_i + n_i\cos\theta_j} \right]\right]$$

~~and~~

$$\left[\left[r_{ij(s)} = \frac{n_i\cos\theta_i - n_j\cos\theta_j}{n_i\cos\theta_i + n_j\cos\theta_j} \right]\right]$$

$$r_{ik(p)} = \frac{n_k\cos\theta_i - n_i\cos\theta_j}{n_k\cos\theta_i + n_i\cos\theta_k}$$

and

$$r_{ik(s)} = \frac{n_i\cos\theta_i - n_k\cos\theta_k}{n_i\cos\theta_i + n_k\cos\theta_k}$$

and wherein $\beta_1 = \dfrac{2\pi n_1 e_1 \cos\theta_1}{\lambda}$,

with $\cos\theta_1 = \sqrt{1 - \left(\dfrac{n_0}{n_1}\right)^2 \sin^2\theta_0}$.

2. (currently amended) A support intended for observing between crossed polarisers an object placed on the support or in the vicinity thereof in a medium (3) of <u>refraction</u> index n_0 with incident convergent <u>spatially</u> incoherent illumination under an angle θ_0 at a wavelength λ, including

- a substrate (1) of complex refraction index n_2,

- a layer (2) of complex refraction index n_1 and of thickness e_1 <u>on said substrate, said substrate and said layer being in a medium of index n_0 and being configured for observation with spatially incident convergent non-coherent illumination under an angle θ_0 at a wavelength λ, said angle θ_0 being with respect to and axis normal to an observation surface of the support</u>

~~characterised in that~~ <u>wherein</u>, the value of the thickness e_1 of the layer (2) is within 2 % so that:

$$\frac{d}{de_1}\left|\sigma^2\right| = 0$$

with

$$\sigma = \frac{\sigma_{01} + \sigma_{12}(1+\pi_{01})e^{(-2j\beta_1)} + \sigma_{01}\pi_{12}e^{(-4j\beta_1)}}{(1 + r_{01(p)} + r_{12(p)}e^{(-2j\beta_1)})(1 + r_{01(s)}r_{12(s)}e^{(-2j\beta_1)})}$$

$$\sigma = \frac{\sigma_{01} + \sigma_{12}(1+\pi_{01})e^{(-2j\beta_1)} + \sigma_{01}\pi_{12}e^{(-4j\beta_1)}}{(1 + r_{01(p)}r_{12(p)}e^{(-2j\beta_1)})(1 + r_{01(s)}r_{12(s)}e^{(-2j\beta_1)})}$$

a formula wherein [[σ_{ij}]] $\underline{\sigma_{ik}}$ and [[π_{ij}]] $\underline{\pi_{ik}}$ represent respectively the sum and the product of the Fresnel coefficients of the different interfaces [(i, ~~j~~$\underline{k}$)=(0,1) or (1,2)][[:]]

$$r_{ij(p)} = \frac{n_j \cos\theta_i - n_i \cos\theta_j}{n_j \cos\theta_i + n_i \cos\theta_j}$$

~~and~~

$$r_{ij(s)} = \frac{n_i \cos\theta_i - n_j \cos\theta_j}{n_i \cos\theta_i + n_j \cos\theta_j}$$

$$r_{ik(p)} = \frac{n_k \cos\theta_i - n_i \cos\theta_j}{n_k \cos\theta_i + n_i \cos\theta_k}$$

$\underline{and}$

$$r_{ik(s)} = \frac{n_i \cos\theta_i - n_k \cos\theta_k}{n_i \cos\theta_i + n_k \cos\theta_k}$$

and wherein $\beta_1 = \dfrac{2\pi n_1 e_1 \cos\theta_1}{\lambda}$, with $\cos\theta_1 = \sqrt{1 - \left(n_0 \big/ n_1\right)^2 \sin^2\theta_0}$.

3. (currently amended) A support intended for optimising the useful extinction coefficient of a polarising microscope for observing an object placed on the support or above the support in a medium (3) of <u>refraction</u> index n_0 with incident convergent <u>spatially</u> incoherent illumination under an angle θ_0 at a wavelength λ, including

  - a substrate (1) of complex refraction index n_2,

  - a layer (2) of complex refraction index n_1 and of thickness e_1 <u>on said substrate, said substrate and said layer being in a medium of index n_0 and being configured for observation with spatially incident convergent non-coherent illumination under an angle θ_0 at a wavelength λ, said angle θ_0 being with respect to and axis normal to an observation surface of the support</u>

characterised in that,

the value of the thickness e_1 of the layer (2) is within 2 % so that:

$$\frac{d}{de_1}\left(\frac{|\sigma|^2}{R_{NP}}\right) = 0$$

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with

$$R_{NP} = \frac{1}{4}\left|r_p + r_s\right|^2 + \frac{1}{4}\left|r_p - r_s\right|^2$$

and

$$r_p = \frac{r_{01(p)} + r_{12(p)}e^{(-2j\beta_1)}}{1 + r_{01(p)}r_{12(p)}e^{(-2j\beta_1)}} \qquad \text{and} \qquad r_s = \frac{r_{01(s)} + r_{12(s)}e^{(-2j\beta_1)}}{1 + r_{01(s)}r_{12(s)}e^{(-2j\beta_1)}}$$

and

$$\left[\left[\sigma = \frac{\sigma_{01} + \sigma_{12}(1+\pi_{01})e^{(-2j\beta_1)} + \sigma_{01}\pi_{12}e^{(-4j\beta_1)}}{(1 + r_{01(p)} + r_{12(p)}e^{(-2j\beta_1)})(1 + r_{01(s)}r_{12(s)}e^{(-2j\beta_1)})}\right]\right]$$

$$\sigma = \frac{\sigma_{01} + \sigma_{12}(1+\pi_{01})e^{(-2j\beta_1)} + \sigma_{01}\pi_{12}e^{(-4j\beta_1)}}{(1 + r_{01(p)}r_{12(p)}e^{(-2j\beta_1)})(1 + r_{01(s)}r_{12(s)}e^{(-2j\beta_1)})}$$

a formula wherein [[σ_{ij}]] $\underline{\sigma_{ik}}$ and [[π_{ij}]] $\underline{\pi_{ik}}$ represent respectively the sum and the product of the Fresnel coefficients of the different interfaces [(i,[[j]]$\underline{k}$)=(0,1) or (1,2)][[:]]

$$\left[\left[r_{ij(p)} = \frac{n_j\cos\theta_i - n_i\cos\theta_j}{n_j\cos\theta_i + n_i\cos\theta_j}\right]\right]$$

~~and~~

$$\left[\left[r_{ij(s)} = \frac{n_i\cos\theta_i - n_j\cos\theta_j}{n_i\cos\theta_i + n_j\cos\theta_j}\right]\right]$$

$$r_{ik(p)} = \frac{n_k \cos\theta_i - n_i \cos\theta_j}{n_k \cos\theta_i + n_i \cos\theta_k}$$

and

$$r_{ik(s)} = \frac{n_i \cos\theta_i - n_k \cos\theta_k}{n_i \cos\theta_i + n_k \cos\theta_k}$$

and wherein $\beta_1 = \dfrac{2\pi n_1 e_1 \cos\theta_1}{\lambda}$, with $\cos\theta_1 = \sqrt{1 - \left(n_0 / n_1\right)^2 \sin^2\theta_0}$.

4. (currently amended) A support according to ~~claim 1~~ claim 2, characterised in that the values of the refraction index n_1 and of the thickness e_1 of the layer (2) are within 2 % such that:

$$\sigma = 0$$

5.(currently amended) A support according to claim 4, characterised in that the substrate (1) and the layer (2) are dielectric or little absorbent, the ~~module~~ modules of the imaginary portion of their complex index being smaller than 0.01, the general conditions being reduced to the conditions:

$$n_1 e_1 \cos\theta_1 = \frac{\lambda}{4} + k\frac{\lambda}{2}$$

and

$$n_1^2 = \frac{n_2^2 + \sqrt{n_2^2 \cos^2\theta_0 (n_2^2 - n_0^2 \sin^2\theta_0)}}{n_2^2 + n_0^2 \cos^2\theta_0}$$

with ~~k integer~~ <u>integer *k*</u> and with an uncertainty of 2 % on the values of n_1 and e_1

6. (currently amended) A support according to claim 5, characterised in that θ_0 is smaller than 5°, the general conditions being reduced to

$$\frac{2}{n_1^2} = \frac{1}{n_0^2} + \frac{1}{n_2^2}$$

and

$$n_1 e_1 \cos\boldsymbol{\theta_1} = \frac{\lambda}{4} + k\frac{\lambda}{2}$$

with ~~k integer~~ <u>integer *k*</u> and with an uncertainty of 2 % on the values of n_1 and e_1.

7. (currently amended) A support according to claim 1, ~~characterised in that it is~~ intended for use with annular incident illumination with an angle of incidence θ_0 which is unique within ± 2.5°.

8. (currently amended) A support according to claim 1, ~~characterised in that it is intended~~ <u>configured</u> for use in incident and convergent axial illumination with an average angle of incidence θ_0 associated with ~~its~~ <u>a</u> total angular opening $\Delta\theta_0$ by the relation :

$$\cos\theta_0 = \cos^2\left(\frac{\Delta\boldsymbol{\theta_0}}{2}\right)$$

9. (previously presented) A support according to claim 1, characterised in that the illumination is monochromatic or quasi-monochromatic at the wavelength λ.

10. (previously presented) A support according to claim 1, characterised in that the illumination has a continuous wide spectrum or is polychromatic with maximum span $\pm$ 0.3 λ around its average wavelength λ.

11. (currently amended) A support according to claim 1, intended for use in the air as a surrounding medium (3), with θ_0 = 30° and [[.]] $\underline{\lambda}$ = 589.3 nm, characterised in that the substrate (1) is made of cadmium with n_2 = 1.13-5.01j, the layer (2) having an index n_1 = 1.42 and e_1 = 1084 Angströms.

12. (currently amended) A support according to claim 1, characterised in that the substrate (1) and the $\underline{layer}$ (2) have the specificities of the following table wherein n_1 and e_1 are the index and the thickness of the layer, n_2 the complex refraction index of the substrate (1), in the air as a surrounding medium (3), θ_0 = 5° and [[ ]] $\underline{\lambda}$ = 540 nm

Substrate	n_2	n_1	e_1(Å)
Gold	0.40 − 2.6j	1.70	694
Silver	0.13 − 3.44j	1.59	795

Aluminium	0.92 — 0.95j	2.01	346
Nickel	1.76 — 3.2j	1.51	847

13. (currently amended) A support according to claim 1, characterised in that θ_0 is an average angle of incidence equal to 20° and in that the substrate (1) and the layer (2) have the specificities of the following table wherein n_1 and e_1 are the index and the thickness of the layer (2), n_2 the complex refraction index of the substrate (1), in the air as a surrounding medium (3) and [[.]] $\underline{\lambda}$ = 540 nm.

Substrate	n_2	n_1	e_1(Å)
Gold	0.40 — 2.6j	1.64	739
Silver	0.13 — 3.44j	1.55	838
Aluminium	0.92 — 0.95j	1.89	399
Nickel	1.76 — 3.2j	1.48	890

14. (currently amended) A support according to claim 1, characterised in that θ_0 is equal to 5° and in that the substrate (1) and the layer (2) have the specificities of the following table wherein n_1 and e_1 are the index and the thickness of the

layer (2) within 2 %, n_2 the complex refraction index of the substrate (1), n_0 the index of the surrounding medium (3) , [[ ]] $\underline{\lambda}$ = 589,3 nm when the ~~layer (2)~~ <u>substrate</u> is made of cadmium and [[ ]] $\underline{\lambda}$ = 540 nm in the other cases[[.]]

Substrate	n_2	n_0	n_1	e_1
Gold	$0.40 - 2.6j$	1.33	2.42	490
Gold	$0.40 - 2.6j$	1.5	1.79	755
Silver	$0.13 - 3.44j$	1.33	2.28	512
Silver	$0.13 - 3.44j$	1.5	2.7	412
Aluminium	$0.92 - 0.95j$	1	1.89	399
Nickel	$1.76 - 3.2j$	1.33	2.11	572
Nickel	$1.76 - 3.2j$	1.5	2.45	473
Cadmium	$1.13-5.01j$	1	1.49	970
Cadmium	$1.13-5.01j$	1.33	2.05	684
Cadmium	$1.13-5.01j$	1.5	2.36	582
Tin	$1.48-5.25j$	1	1.48	899
Tin	$1.48-5.25j$	1.33	2.02	640
Tin	$1.48-5.25j$	1.5	2.33	548
Copper	$1.04-2.59j$	1	1.62	746
Copper	$1.04-2.59j$	1.33	2.23	423
Copper	$1.04-2.59j$	1.5	2.83	351
Iron (evaporated)	$1.51-1.63j$	1	1.54	737
	$1.51-1.63j$	1.33	2.23	423
	$1.51-1.63j$	1.5	2.72	305

15. (previously presented) A support according to claim 1, characterised in that the parameters are kept with the exception

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of the wavelength λ and of the thickness e_1 of the layer 2 which

are modified proportionally, $\frac{e_1}{\lambda}$ not being modified.

16.   (currently   amended) An   accessory   ~~intended~~

<u>configured</u> for observing a ~~preferably~~ liquid sample<u>, said</u>

<u>accessory being</u> formed of a Petri dish and of a support ~~intended~~

~~for receiving~~ <u>configured to receive</u> said sample, ~~characterised in~~

~~that:~~ <u>wherein</u>

    – the support complies with claim 1,

    – the support is ~~the~~ <u>a</u> bottom of ~~this~~ <u>the Petri</u> dish.

17. (previously presented) A device for observing a

sample including an optical microscope, a support intended for

receiving said sample and two crossed polarisers, characterised

in that the support complies with claim 1.

18. (previously presented) A device for observing a

sample including an optical microscope, an accessory intended for

receiving said sample and two crossed polarisers, characterised

in that the accessory complies with claim 16.

19. (currently amended) A device for observing a sample

including an optical microscope, a support intended for receiving

said sample, a polariser and a quarter-wave ~~blade~~ <u>plate</u>,

characterised in that the support complies with claim 1.

20. (currently amended) A device for observing a sample including an optical microscope, an accessory intended for receiving said sample, a polariser and a quarter-wave ~~blade~~ plate, characterised in that the accessory complies with claim 16.

21. (currently amended) A device for observing a sample according to claim ~~16~~ 17, characterised in that the optical microscope is fitted with a differential interferential contrast device.

22. (new) A support according to claim 3, characterised in that the values of the refraction index n_1 and of the thickness e_1 of the layer (2) are within 2 % such that:

$$\sigma = 0$$

23. (new) An accessory configured for observing a liquid sample, said apparatus being formed of a Petri dish and of a support configured to receive said sample, wherein:

– the support complies with claim 2,

– the support is a bottom of the Petri dish.

24. (new) An accessory configured for observing a liquid sample, said apparatus being formed of a Petri dish and of a support configured to receive said sample, wherein:

– the support complies with claim 3,

- the support is a bottom of the Petri dish.

25. (new) An accessory configured for observing a liquid sample, said apparatus being formed of a Petri dish and of a support configured_to receive said sample, wherein:

- the support complies with claim 4,

- the support is a bottom of the Petri dish.

26. (new) A device for observing a sample including an optical microscope, a support intended for receiving said sample and two crossed polarisers, wherein the support complies with claim 2.

27. (new) A device for observing a sample including an optical microscope, a support intended for receiving said sample and two crossed polarisers, wherein the support complies with claim 3.

28. (new) A device for observing a sample including an optical microscope, a support intended for receiving said sample and two crossed polarisers, wherein in that the support complies with claim 4.